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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,345	02/12/2002	Halbert Tam	AMAT/6075/CMP/CMP/RKK	5690

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APPLIED MATERIALS, INC.
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SANTA CLARA, CA 95050

EXAMINER

MCDONALD, SHANTESE L

ART UNIT PAPER NUMBER

3723

DATE MAILED: 06/18/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
10/074,345

Applicant(s)
Halbert et al.

Examiner
McDonald, Shantese

Art Unit
3723



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Feb 12, 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2,4 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1-10,26-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsai et al.

Tsai et al. teaches a method of selectively removing a dielectric disposed on a substrate, 300, which includes a shallow trench isolation, (fig. 2), having a first dielectric material, which is silicon oxide, (col. 6, lines 62-63), and a second dielectric material disposed thereon, which is silicon nitride, (col. 6, line 55- col. 7, line 9). Tsai et al. also teaches positioning the substrate by means of a carousel, 60, in proximity with a fixed abrasive chemical mechanical polishing pad, (col. 3, lines 50-52), disposed on a rotatable platen, 30, and dispensing a polishing composition comprising between 1 wt% and about 8 wt% glycine, (col. 5, lines 27-32), deionized water, (col. 6, lines 37-38), and potassium hydroxide as the pH adjusting agent, which adjusts the pH of the polishing composition to about 7 to 12, (col. 6, lines 4-6).

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Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11-25 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Tsai et al. in view of Kaisaki et al.

Tsai et al. teaches all the limitations of the claims except for the removal rate of the second dielectric material being less than the removal rate of the first dielectric material, and the removal rate ratio of the first material to the second material being between about 10:1 or greater or 100:1 to about 2000:1. Kaisaki et al. teaches the removal rate of the second dielectric material being less than the removal rate of the first dielectric material, (pg. 13, lines 13-18). It would have been obvious to one having ordinary skill in the art at the time the invention was made, to provide the invention of Tsai et al. with the capability of having the removal rate of the second dielectric material being less than the removal rate of the first dielectric material, as taught by Kaisaki et al., in order to enhance the polishing capabilities.

It would have been further obvious to provide the invention of Tsai et al. with the removal rate ratio of the first material to the second material being between about 10:1 or greater or 100:1 to about 2000:1, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

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Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kido et al. was cited to show another example of a semiconductor device.
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shantese McDonald whose telephone number is (703) 308-8722.



Joseph J. Hail, III
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S.L.M.

June 9, 2003